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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/989,931 | 11/21/2001 | Fernando Gonzalez | MI22-1801 | 1568 |

21567 7590 08/05/2003

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| EXAMINER |
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DIAZ, JOSE R

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| ART UNIT | PAPER NUMBER |
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2815

DATE MAILED: 08/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,931

Applicant(s)

GONZALEZ ET AL.

Examiner

José R Díaz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 2,4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 6-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

➤ Applicant's election without traverse of Species III in Paper No. 5 is acknowledged.

Claim Rejections - 35 USC § 102

➤ The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

➤ Claim 1, 3, 11-18, and 25-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugiyama (US Pat. No. 5,999,675).

Regarding claim 1, Sugiyama teaches a method comprising the steps of: providing a monocrystalline silicon substrate (3); forming a recess (16); at least partially filling the recess with a semiconductor material (6) that comprises at least 1 at% of an element other than silicon; forming a first semiconductor circuit (10) over first portion of the substrate; and forming a second semiconductor circuit component (10) over the semiconductor material that at least partially fills the recess (see Fig. 5 and 7B).

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Regarding claims 3 and 16-18, Sugiyama teaches a second monocrystalline mass (3) over an insulative material (2) and over a first monocrystalline mass (1) (see Fig. 5 and 7B).

Regarding claims 11-12 and 25-26, Sugiyama teaches a SiGe semiconductor material (6) (see Fig. 5 and 7B).

Regarding claim 13, Sugiyama teaches providing an insulative material spacer (5) along a sidewall of the recess (see Fig. 5).

Regarding claims 14 and 15, Sugiyama teaches a silicon dioxide spacer (5) (see Fig. 5).

➤ Claims 1, 3, 6-12, and 16-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Beebe et al. (US Pat. No. 6,462,381 B1).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, Beebe et al. teaches a method comprising the steps of: providing a monocrystalline silicon substrate (34) (see Fig. 4a); forming a mask (see col. 5, lines 65-67); forming a recess (27) (see Fig. 4b); at least partially filling the recess with a semiconductor material that comprises at least 1 at% of an element other than

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silicon (see col. 4, lines 25-41); forming a first semiconductor circuit (17) over first portion of the substrate (see Fig. 1); and forming a second semiconductor circuit component (25) over the semiconductor material that at least partially fills the recess (see Fig. 1).

Regarding claims 3 and 16-19, Beebe et al. teaches a second monocrystalline mass (34) over an insulative material (14) and over a first monocrystalline mass (12) (see Fig. 4a).

Regarding claims 6-12 and 20-30, Beebe et al. teaches that the semiconductor material comprises an element other than silicon (see col. 4, lines 25-41).

Conclusion

➤ The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references disclose a recess having a SiGe and spacer along sidewall of the recess: see Suyiyama (JP 10-270746 and JP 11-177122) material.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R Díaz whose telephone number is (703) 308-6078. The examiner can normally be reached on 9:00-5:00 Monday, Tuesday, Thursday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for

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the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 746-3891 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JRD
July 27, 2003

A handwritten signature in black ink, appearing to read 'Eddie Lee', is positioned above the printed name and title.

EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800